

EXHIBIT 34

**Review of
Maintenance Issues at Pinnacle Belvoir**

16 May 2011

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Introduction and Summary

This review was initiated in response to allegations made by the Maintenance Supervisor, George Washington Community, Fort Belvoir. In response to a 27 October 2010 disciplinary action for falsifying work order information, the complainant wrote that from “day one” of working at Fort Belvoir he was required to change the completion date and time on failing service requests. He further stated the practice was “base wide” and had been openly discussed in manager meetings with the Investment Manager present.¹

The allegation that some associates improperly updated work order data was substantiated. In interviews, two Maintenance Supervisors admitted to changing work order start dates and times for the sole reason of making the work orders meet the response time criteria. Sample data available from e-mail records, financial reports and the maintenance database showed at least nine associates changed work order date and time information decreasing the number of failing work orders by more than 80% for three of seven months where sufficiently detailed data was available for analysis. An analysis of less detailed data for the entire 59 month period under review found a total of eight months with work order update patterns similar to those observed in the detailed data analysis. The number of late-updated work orders, the associates making updates, and the manner in which the work orders were changed was not consistent in many instances with the mere correction of data entry errors. It is important to note that while some work orders were changed from failing to passing, there was also evidence some work orders were changed to failing, and that 15% of the late-updated work orders were recorded as failing – a higher percentage than observed in any of the original draft pass/fail reports.

The allegation that management officials directed associates to falsify work order data is not substantiated. Only three of nine Community Managers or Maintenance Supervisors claimed to have been directed to falsify data or felt they had been directed to do so, but an additional two felt that others may have perceived the discussions as pressure to do so. While two Maintenance Supervisors who admitted to falsifying data claimed to have been directed to do so by the QA/QC Inspector and the Maintenance Director, the other three Maintenance Supervisors stated they were never told to make work orders pass the response times, did not recall any discussions in maintenance or manager meetings that could be interpreted as guidance to falsify data, and never felt any pressure to falsify work order data. The Community Director and two Investment Managers denied directing anyone to falsify maintenance data, and stated that nobody expressed concerns to them about the guidance they gave related to the pass/fail report. A review of e-mail showed an ongoing concern about getting correct information into the database in a timely manner, and constant reminders to review and correct inaccurate data related to “negatives” and “reviews,” but there was no mention of changing information related to failing work orders.

A variety of options to improve maintenance procedures are offered using an analysis organized along the lines of DOTMLPF – Doctrine, Organizations, Training, Leader Development, Material, Personnel, and Facilities.

¹ Complainant’s written statement, 27 October 2010.

Scope

This review looked into maintenance issues at Pinnacle Belvoir that arose from allegations made by a Community Maintenance Supervisor. The review encompassed a time period of 59 months from November 2005 to September 2010, focused on the following three objectives:

Objective 1. Did associates improperly update work order data?

Objective 2. Did management officials direct associates to falsify work order data?

Objective 3. What improvements to work practices can be made to prevent the problem from continuing?

This review uses a “preponderance of the evidence” standard, defined as that degree of credible evidence that a reasonable person, considering the record as a whole, would accept as sufficient to find that a contested fact is more likely to be true than untrue.

The naming convention used throughout this document generally identifies associates by the position they occupied when the actions described occurred. The associates may no longer be currently occupying those positions, and the same associate may be referred to using multiple position descriptions if he or she occupied different positions in the organization throughout the time period under review.

Most of the numbers calculated from the data analysis in Objective 1 are prefaced by the caveat “approximately” or presented as a range. This is due to a low confidence in the underlying data in the reports that are under analysis. For example, the July 2007 Summary of Completed Work Orders shows a total of 1857, however, the three detailed lists of all work orders for the same period only show a total of 1838 work orders.

Background

Organization structure.

Pinnacle’s Belvoir operations are currently organized around a headquarters and four community management offices. The headquarters, commonly referred to as the Welcome Center, led by the Investment Manager, is made up of approximately 15 individuals providing overall accounting, marketing, and maintenance support. The maintenance section consists of the Maintenance Director, the Quality Assurance/Quality Control Safety Inspector, and the Warranty Coordinator.

Each of the four community management offices is made up of a Community Manager, typically two Assistant Managers or Resident Specialists, a Maintenance Supervisor, three or four Maintenance Technicians, and one or two Groundskeepers.

Communities are further sub-divided into villages, with two to seven villages assigned to each community. The number of communities as well as the assignment of villages to the communities has varied over time, based primarily on demolition of old housing units and construction of new villages. During these periods, villages were typically split into two – the original village and “new” village.

Current community organization and number of housing units is listed below.² For clarity, this report will use these community designations throughout, noting any changes only where necessary.

Vernondale Community	404	Woodlawn Community	515
Vernondale Village	162	New Woodlawn Village	241
Herryford Village	170	Lewis Village	274
New Colyer Village	72		
Fairfax Community	480	George Washington Community	566
New Fairfax Village	101	New George Washington Village	196
New Rossell Village	70	Dogue Creek Village	266
Cedar Grove	82	New River Village	104
Belvoir Village	65		
New Jadwin Village	61		
Gerber Village	77		
New Park Village	24		

Maintenance Operations.

The Investment Manager has only three maintenance personnel on his staff, the Maintenance Director, QA/QC Inspector, and Warranty Coordinator.

The essential functions of the Maintenance Director include responsibility for overall operation of the physical plant; establishing and implementing maintenance and preventive maintenance guidelines for the maintenance teams; and ensuring prompt and efficient service by the maintenance teams.³ The position of the QA/QC Inspector is not defined in the Community Development and Management Plan (CDMP.) The duties of the QA/AC Inspector include monitoring the quality of homes renovated, new homes, interaction with troubled residents and compilation of reports.⁴

² “Box Score Summary” dated 22 Feb 2011.

³ CDMP Property Management and Operations Plan, 15 August 2003, pg 152.

⁴ Interview, QA/QC Inspector, 10 Feb 2010.

Maintenance operations are largely decentralized, with the majority of maintenance assets located within the four communities.

Within each community, the Maintenance Supervisor is responsible for the oversight and coordination of all maintenance work for a designated location within the community and management of the maintenance staff. His essential functions include prioritizing, scheduling, and assigning service requests; making certain all service requests are completed on a timely basis; and completing reports as required by management. The Maintenance Supervisor reports to the Maintenance Director⁵

Service Requests.

Pinnacle provides 24-hour maintenance service to residents. During business hours residents can call or visit the community management office to submit a service request (also referred to as a work order or ticket.) Residents can also utilize the CrossFire Contact Center, a contracted call service, at any time, but that is the only option outside of normal business hours.

Service requests are classified at intake into one of three priorities – Emergency, Urgent, or Routine.

Examples of Emergency service requests are: natural gas leaks, loss of heating or cooling, sewage or water flooding, electrical hazards, or improperly secured doors. These requests will be handled immediately. The technician will be on site within one hour of the request and will not leave until the situation has been corrected.⁶

Examples of Urgent service requests are: range/oven failure that prevents cooking, refrigerator failure that could result in food spoilage, water heater failure, or inoperable toilet. These requests will be responded to within four hours during normal business hours, and within eight hours during evenings and weekends.⁷

Examples of Routine requests are: dripping faucets, broken floor tiles, loose baseboards, or interior door problems. These requests will be handled during normal business hours, within 72 hours of the request.⁸

The Property Management Incentive Performance Plan links a portion of the management fee to the achievement of specific property management benchmarks, one of which is the timely response to service requests.

The stated requirements of the most current Property Management Incentive Performance Plan are not consistent with the CDMP Property Management and Operations Plan. The goal of one hour response for emergency work orders remains unchanged. There is no mention of

⁵ CDMP pg 164.

⁶ CDMP pg 76.

⁷ CDMP pg 77.

⁸ CDMP pg 77.

separate response times for urgent work orders during or after normal business hours – there is a single four hour standard. The major change is to response to routine work orders, where the criterion shifts from response to completion.

“Routine Maintenance Completion Time Goal = not longer than 72 hours after initial response. Initial response means that Pinnacle will go to the residence within 72 hours of the resident placing the routine maintenance request. Instances where unique parts, supplies or third-party expertise are required may be waived on a case by case basis by FBRC and Army or their designated representatives.”⁹

While the CDMF uses various terms – “on site,” “responded to,” and “handled” – when addressing the standard, and the Incentive Performance Plan uses the term “go to the residence within...” there is an additional interpretation common among the Pinnacle Belvoir associates. Interviews with the Community Managers and Maintenance Directors indicate that at some point, simply calling the resident to acknowledge receipt of the service request became accepted as fulfilling the requirement of responding to the service request.

Maintenance Management.

Maintenance information is maintained in a commercial property management software product called Yardi Voyager. The maintenance module consists of a series of menus and data fields. An example of the main page is depicted in figure 1. Some fields are auto-generated, such as the call time, in the status history section at the bottom right of the screen. The work completed date and time fields are auto-generated when the status is changed to “work completed” or this can be manually entered.

The status history section also shows the username of the individual who last updated the work order, along with the date updated. The actual substance of the change – which data fields were modified – is not stored in the database.

Dates are entered into the system either by typing the date using the computer keyboard or by accessing a pop-up calendar and clicking the appropriate date with the computer mouse. Times can be entered either by typing the time using the computer keyboard or accessing a pop-up matrix to click on the nearest 15 minute time increment. Regardless of the method of entering the time, the value defaults to a.m. unless the user specifically selects p.m. Failing to accurately report an afternoon time would actually under-report the elapsed time. These features are shown in figure 2.

⁹ Property Management Incentive Performance Plan, 2007.

Yardi Voyager

Roles Home Filter Daily Activity Provision Calc Logout

Work Order 252256 - CO detector g

Status: Work Completed
 Property: ml9103g
 Unit: MAL9691
 Bill To:
 Vendor:
 Asset:
 Template:
 Related WO:

Description: CO detector going off and reading
 Priority: Emergency
 Category: Preventative
 SubCategory: Preventative
 Caller Name: Brian Roberts
 Caller Phone: (703) 781-7003 x2532271038
 Caller Email: nobody@nowhere.mil
 Resolution:

Access/Entry Notes: Contact: 703-781-7003 fm PTE dog locked up no alarm
 Problem Description: CO detector going off and reading air on the detector sub as emergency ethornburg

Buttons: Save, New, Print, Help, Get Defaults, View Occupant

Other Info Labor Material Pay/Charge

General Information
 OK to Enter? Yes
 Authorized by:
 Not to Exceed: 0.00
 App Req: No
 Source:
 Warranty:
 Carve Out:
 User defined S:

Billing Information
 Batch Name:
 Invoice Number:
 Invoice Date:

Status History
 Origin:

Status	Date	Time
Call	10/25/2006	4:51 pm
Work Completed	10/26/2006	9:18 am

 Created by: crossline028 on: 10/25/2006
 Updated by: juanc on: 10/26/2006

Approval Information

Employee	Date	Approve?
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Figure 1

March 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Time Sheet

	1	2	3	4	5	6	7	8	9	10	11	12
00	00	00	00	00	00	00	00	00	00	00	00	00
15	15	15	15	15	15	15	15	15	15	15	15	15
30	30	30	30	30	30	30	30	30	30	30	30	30
45	45	45	45	45	45	45	45	45	45	45	45	45

AM PM

Figure 2

The scheduled start and finish dates and times are entered on the labor tab, which is shown at the bottom of the page in figure 3.

Work Order 252256

Status: Work Completed

Property: M09103g

Unit: MAL9691

Description: CO detector going off and reading

Priority: Emergency

Category: Preventative

SubCategory: Preventative

Caller Name: Brian Roberts

Caller Phone: (703) 781-7003 x252271038

Caller Email: brobey@scabarc.mil

Resolution:

Access/Entry Notes: Contacted 703-781-7003 hmo
ITE dog locked up no alarm

Problem Description: CO detector going off and reading air on the detector
sub as emergency ethorburg

Employee		Skill	Start Dt.	Start Time	Finish Dt.	Finish Time	Start Dt.	Start Time	Finish Dt.	Finish Time	Hours Del
M09103g							10/23/2006	1:00 pm	10/23/2006	3:15 pm	0.25
											0.00
											0.00
											0.00

Figure 3

When a service request is created it appears in the appropriate Community Maintenance Supervisor's account in a "call" status. The Maintenance Supervisor assigns the work to a technician, fills in the scheduled date and time, and changes the status to "scheduled." When the technician begins the work the technician should fill in the actual start date and time and change the status to "in progress." Upon completion of the work, the actual finish date and time should be entered, and the status changed to "work completed." Status changes to "in progress" and "work completed" are time-stamped and show up in the Status History section of the work order main page. If more than one call to the residence is required, for example an initial troubleshooting visit followed by a subsequent visit to install parts, the technician should record each call start and finish time on a separate line.

A typical data entry error when typing in times or dates would be to hit the key next to the one intended. This would result in an error of one or ten using the top row of number keys, or an error of one or three when using the numeric keypad.

If using the mouse to select a time off of the pop-up time matrix, an error of one hour would be most likely. Finally, forgetting to change the default from a.m. to p.m. would have the effect of decreasing the response time by 12 hours.

If using the mouse to select a date off of the pop-up calendar, the most likely errors would be one day (right or left,) 7 days (up or down,) or 28, 30, or 31 days if the wrong month were selected.

Yardi has a reporting feature that creates the pass/fail report. The calculation of hours from call to start is based on the call time, which is automatically generated when the work order is

created, and the actual start time entered into the labor and parts section of the work order. If no value is entered for the actual start time, the system falls back to the time-stamp created when the status was changed from scheduled to “in progress.” If there is no actual start time and no in progress time-stamp, the work order is scored as a review.¹⁰

All Pinnacle Belvoir associates with access to the maintenance module of Yardi, have access to any property on Fort Belvoir, regardless of the Community with which they are associated. Permissions within the system are based on the account type, maintenance technician or maintenance supervisor. Before 2011, maintenance technicians did not have user accounts for Yardi, and technicians typically accessed Yardi using their Maintenance Supervisor’s account.¹¹

Pass/Fail Reporting.

While work order response times were established in the initial organizing documents, it does not appear that any formal performance reports were required until November 2005, when they started appearing as part of the monthly financial report.¹²

What is commonly referred to as the pass/fail report is actually a group of four documents that capture work order information for the month. They were typically created by the QA/QC Inspector from Yardi on the 8th or 9th business day of the month, and passed to the Accountant for inclusion into the monthly financial report, which is submitted on the 10th business day of the month.

While the QA/QC inspector is responsible for creating the official report, anybody with access to the maintenance module can create and view the report at any time.

The first document is the work order summary, showing the number of completed work orders grouped by priority and village, along with statistical information on response and completion time. An example from April 2009 is shown in figure 4.

¹⁰ Interview, Pinnacle Client Reporting Analyst, Ease Region Accounting, 22 March 2011.

¹¹ Interviews, Vernondale Maintenance Supervisor, 16 March, 2011, and Fairfax Maintenance Supervisor, 7 March, 2011.

¹² Interview, Pinnacle Belvoir Accountant, 3 March, 2011.

Completed Work Order Summary					
4/1/2009 to 4/30/2009					
	Property	Work Orders Completed	Average Hours		
			Call Time to Start Time	Start Time to Completed	Call Time to Completed
Emergency	mil9103a - Belvoir Village	8	0.4	1.2	1.6
	mil9103b - Gerber Village	1	0.1	0.8	0.9
	mil9103g - Dogue Creek Village	53	0.4	1.1	1.5
	mil9103j - River Village	24	-0.5	1.7	1.2
	mil9103i - Woodlawn Village	100	0.4	1.0	1.4
	mil9103m - Henryford Village	32	0.2	1.9	2.1
	mil9103n - Vernondale Village	14	0.2	4.3	4.5
	mil9103o - Lewis Village	29	0.4	1.0	1.4
	mil9103p - Cedar Grove	8	0.2	1.2	1.4
	mil9103q - New George Washington	25	0.6	3.3	3.9
	mil9103r - New Park Village	1	0.1	0.5	0.6
	mil9103s - New Rossell Village	2	0.3	1.0	1.3
	mil9103t - New Colyer Village	4	0.1	0.6	0.7
	mil9103u - New Fairfax Village	9	-1.0	13.5	12.5
	mil9103v - New Jadwin Village	2	-3.0	0.3	-2.8
	Emergency Total	312	0.3	1.8	2.1
Routine	mil9103a - Belvoir Village	97	14.2	0.9	15.0
	mil9103b - Gerber Village	19	23.5	1.2	24.8
	mil9103o - Fairfax Village	3	1,030.1	0.5	1,030.7
	mil9103g - Dogue Creek Village	276	31.9	0.8	34.5
	mil9103i - George Washington Vill	2	25.3	3.0	28.4

Figure 4

The other three documents are spreadsheets with detailed listings of all the work orders for the month, one spreadsheet for each priority – emergency, urgent, and routine. The pass or fail rating is made based on the “hours from call to start” value, compared to the appropriate standards for that priority. An example from the April 2009 emergency work order listing is shown in figure 5.

On some occasions, the QA/QC Inspector sent the Community Managers and Maintenance Supervisors a listing of problem work orders prior to creating the final report, requesting they review their data. This draft pass/fail report identified those work orders that were failing, those showing a negative response or completion time, and those that were in a review status. On other occasions he sent out e-mail requests for the Community Managers and Maintenance Supervisors to review their data, but did not send lists.

Work Order Analysis Date Range 04/01/2009 To 04/30/2009 Property=.bvmain Priority = 'Routine'										
Property Desc	Unit	WO	Priority	Description	Call Date	Hours from Call to Start	Hours from Start to Complete	Hours from Complete to Call to	Pass/Fail	Pass %
Belvoir Village	WOC5455	917962	Routine	Chain on flapper valve broke	4/1/2009	5.42	0.25	5.67	Pass	1.00
Belvoir Village	FAI10125	918267	Routine	Remove curtains from home	4/1/2009	47.77	0.25	48.02	Pass	1.00
Belvoir Village	MAS5440	918279	Routine	Escort ISTA contractors	4/1/2009	2.60	1.00	3.60	Pass	1.00
Cedar Grove	BEL9637	944606	Routine		4/30/2009	6.77	0.83	7.60	Pass	1.00
Cedar Grove	BEL9637	944607	Routine	TURN HOSE B.B. ON	4/30/2009	0.48	0.25	0.73	Pass	1.00
Colyer Village	PET5841	554294	Routine	bathroom door locked	4/28/2009	0.00	0.00	0.00	**Review	0.50
Dogue Creek Village	BAR9568	908303	Routine	garbage disposal clogging sink	4/17/2009	71.22	0.75	71.97	Pass	1.00
Dogue Creek Village	BAR9733	933143	Routine	Vent hood fan out	4/20/2009	0.58	0.50	1.08	Pass	1.00
Dogue Creek Village	BAR9586	933223	Routine	drawer broken	4/20/2009	48.45	1.00	49.45	Pass	1.00
Dogue Creek Village	BAR9586	933228	Routine	shelf is broken	4/20/2009	0.00	0.00	0.00	**Review	0.50
Dogue Creek Village	MAL9639	933356	Routine	dryer vent outside wall bird nest	4/20/2009	76.07	0.47	76.53	Fail	0.00
Dogue Creek Village	MAL9636	933534	Routine	bees	4/20/2009	0.13	0.08	0.22	Pass	1.00
Dogue Creek Village	BAR9571	933565	Routine	shave door	4/20/2009	74.63	1.00	75.63	Fail	0.00
Dogue Creek Village	MAL9608	933657	Routine	fridge shelf is broken	4/20/2009	26.88	0.42	27.30	Pass	1.00

Figure 5

Failing work orders are those that were not responded to within the appropriate standard based on the priority. Although the CDMP mentioned a during business hours and after business hours standard for urgent work orders, the eight hour response standard for after business hours requests does not appear to ever have been fully implemented. This priority did not appear in the 2007 or 2009 sample data, and although the April 2010 and some later reports show some work orders in an Urgent-Business category on the Work Order Summary, and some of these work orders appeared on the draft pass/fail reports, there was no new spreadsheet for this category, nor do they appear on the urgent priority spreadsheets.

Additionally, although the 2007 Property Management Incentive Performance Plan from 2007 changed the routine work order standard from “response” within 72 hours to “complete” within 72 hours, the facts behind the implementation of this change could not be fully determined. The reports from 2007 show two pass/fail ratings, one for hours from call to start and one for hours from start to completion. The QA/QC Inspector, who is responsible for completion of the report, stated the hours from start to completion were only intended as information for the Investment Manager and Vice President, and the hours from call to start was

still the official metric.¹³ The April 2009 report and subsequent reports show only one pass/fail score, based on hours from call to start. A review of the December 2010 report shows the pass/fail calculation is still based upon the hours from call to start.¹⁴

Negative work orders are those that show a negative amount of time between the call and response or completion time. These can be caused by inaccurate data entry, delays in creating work orders, or by creating work orders late to capture unplanned work. Negative work orders are scored as passing.

The most common cause of negative work orders cited in interviews was lack of attention to detail during data entry. When entering start and completion times, Yardi defaults to a.m. Failing to change the entry to a p.m. will result in the start or completion appearing to have happened 12 hours prior to the actual time.

Another example cited in several interviews was a problem with Crossfire calling technicians to relay emergency work order information, but not creating the actual work order until some time later. In these cases, the technician could respond by calling the resident or going to the residence before the work order creation time, which is automatically generated in Yardi. Although the start time subsequently entered into Yardi would be correct, the late work order creation time would cause a negative hours from call to start.

A third example of negative time could be caused by a technician performing unplanned work at a residence while there on a scheduled call. Creating a work order upon return to the shop, to document the work and account for time or parts would show up as negative because the call time is automatically set when the work order is created.

Reviews are typically caused by lack of data. Any work order without an actual start time entered or an “in progress” time stamp will show up on the report as a review. Reviews are scored as neither passing nor failing, but are given “half credit” on the work order spreadsheet, so they contribute to a higher pass rate.

¹³ Interview, QA/QC Inspector, 8 March 2011.

¹⁴ A review of the Dec 2010 Routine Work Order spreadsheet submitted with the monthly financial report showed multiple passing work orders (e.g. 1330112, 1331425, 1330849) with call to start times less than 72 hours, but start to complete times well in excess of 72 hours. Conversely, every work order with a call to start time greater than 72 hours was scored as a fail.

Objective 1: Did associates improperly update work order data?**General.**

The allegation that associates improperly updated work order data was substantiated. In interviews, two Maintenance Supervisors admitted to changing work order start dates and times for the sole reason of making the work orders meet the response time criteria. Sample data available from e-mail records, financial reports and the maintenance database showed at least nine associates changed work order date and time information decreasing the number of failing work orders by more than 80% for three of seven months where sufficiently detailed data was available for analysis. An analysis of less detailed data for the entire 59 month period under review found a total of eight months with work order update patterns similar to those observed in the detailed data analysis. The number of late-updated work orders, the associates making the updates, and the manner in which the work orders were changed was not consistent with the mere correction of data entry errors. It is important to note that that while work orders were changed from failing to passing, there was also evidence some work orders were changed to failing, and that 15% of the late-updated work orders were recorded as failing – a higher percentage than observed in any of the original draft pass/fail reports.

The answer to this objective was primarily based on a review of available maintenance data, supplemented by interviews with maintenance personnel and Community Managers, and a review of available e-mail. The occasional draft pass/fail reports sent out by the QA/QC Inspector, along with the corresponding final reports submitted with the monthly financial report, provided an opportunity to view details of the same work order at two distinct points in time. Since these draft reports were the exception, rather than the rule, a less detailed analysis of work order updating patterns was conducted for all of the 59 months under review to determine if there were other instances of a high number of late-updated work orders.

Detailed data analysis.

The QA/QC Inspector provided copies of draft pass/fail reports for the months of April 2009,¹⁵ August 2009,¹⁶ and September 2010.¹⁷ A search of archived e-mail also uncovered draft pass/fail reports for the months of July 2007,¹⁸ August 2007,¹⁹ December 2007,²⁰ and April

¹⁵ 8 May 2009 e-mail from QA/QC Inspector to Community Managers, Maintenance Supervisors, et.al., subject: Last Minute, with attachment labeled April 2009 Las minute pass fail.xls.

¹⁶ 10 Sep 2009 e-mail from QA/QC Inspector to Community Managers, Maintenance Supervisors, et.al., subject: Confirm Status, with attachment labeled Aug 09 Pass Fail ALL.xls.

¹⁷ 6 Oct 2010 e-mail from QA/QC Inspector to Community Managers, Maintenance Supervisors, et.al., subject: Update ASAP, with attachment labeled Update Pass Fail.xls.

¹⁸ 3 Aug 2007 e-mail from QA/QC Inspector to Community Managers, Maintenance Supervisors, et.al., subject: Attention, with attachment labeled Productivity on site.xls.

¹⁹ 12 Sep 2007 e-mail from QA/QC Inspector to Rossell Village Assistant Community Manager, subject: Routine Pass/Fail, with attachment labeled Pass Fail Routine Aug 2007.xls.

2010.²¹ While this is only a sample of seven months out of a period of interest of approximately 60 months, it does provide for a very detailed look at how the data changed during these sample periods. No other pairs of draft and final report were found.

The table in figure 6 contains the comparison of the number of failing work orders on the draft pass/fail, and the final work order spreadsheets submitted with the financial reports for available months. The draft pass fail for the month of August 2007 contained only routine priority work orders, so the data for that month compares only routine priority work orders. Although Woodlawn and Lewis are a single community now, they were separate communities with their own maintenance and management staffs for most of the months reviewed here.

The pass percentages shown were calculated from the data in the reports, and includes the work orders in a "review" status. Since the Aug 07 draft report contained only routine priority work orders, calculation of an overall pass percentage was not possible.

While the 2007 final reports have pass/fail ratings for both hours from call to start and hours from start to complete, the drafts that were sent out by the QA/QC Inspector only showed work orders failing the hours from call to start criterion, therefore this comparison does not address the work orders failing the hours from start to complete criterion.

	Jul 07		Aug 07		Dec 07		Apr 09		Aug 09		Apr 10		Sep 10	
Work Orders	1838		1475*		1430		2726		2408		2578		2281	
	Draft Fails	Final Fails	Draft Fails	Final Fails	Draft Fails	Final Fails	Draft Fails	Final Fails	Draft Fails	Final Fails	Draft Fails	Final Fails	Draft Fails	Final Fails
Vernondale	0	0	171	29	21	1	26	14	22	22	55	55	88	101
Fairfax	1	0	0	0	3	1	8	1	1	1	19	14	42	11
George Washington	7	1	4	4	0	0	192	2	7	2	11	8	39	39
Woodlawn	1	0	3	1	21	4	76	21	0	5	0	0	2	2
Lewis	1	0	0	0	2	0	1	1	0	0	0	0	2	1
Total	10 0.5%	1 0.1%	178 12.1%	34 2.3%	48 3.4%	6 0.4%	303 11.1%	39 1.4%	30 1.2%	30 1.2%	85 3.3%	77 3.0%	173 7.6%	154 6.8%
Pass %	94	96	**	94	89	94	80	97	95	98	93	96	89	93
	3 Aug		12 Sep		3 Jan		8 May		10 Sep		7 May		6 Oct	
* Aug 07 data is for routine priority only														
** Insufficient data available														

Figure 6

²⁰ 1 Jan 2008 e-mail from QA/QC Inspector to Community Managers, Maintenance Supervisors, et.al., subject: pass/fail, with attachment labeled Service requests to Check.xls.

²¹ 7 May 2010 e-mail from QA/QC Inspector to Community Managers, Maintenance Supervisors, subject: Attachment from last submission.Thanks!!!D.A.G., with attachment labeled PASS FAIL APRIL 2010 error.xls.

While the chart shows the number of failing work orders on the draft and final reports, this does not necessarily indicate the number of failing work orders that were changed. There are some instances where new failing work orders were added to the final report, typically after having shown up in a review status on the draft report.

A detailed analysis for each work order is possible based upon the data on the reports and additional information contained in Yardi. The reports contain data fields for work order priority, as well as a calculation of the hours from call to start. Manipulation of either of these two fields can change failing work orders to passing.

Yardi calculates the hours from call to start. Since the call time is fixed, based on when the work order was entered into Yardi, a decrease in hours from call to start is an indication the start time was changed, and the magnitude of the change can be calculated by simple subtraction.

Downgrading the priority lowers the response time standard, potentially changing a failing work order to a passing one. For example, an emergency work order that was responded to 3.5 hours after the call would fail, but if the priority were changed to urgent, it would have met the 4 hour call to start standard.

The time values in the pass/fail report are presented in decimal hours, to one one-hundredth of an hour. In reviewing the changes to start times, two recurring types of questionable changes are apparent – truncation and whole-day reductions.

With truncation, the whole-hours portion of the call to start time is discarded, leaving the decimal portion as the new value. For example, a failing emergency work order with hours from call to start time of 3.55 is changed to 0.55, thus meeting the response time standard of less than one hour. This could be caused by a data entry error in entering the actual finish time.

In whole-day reductions, the hours from call to start are changed in an exact multiple of 24 hours. For example, a failing routine work order with hours from call to start of 97.77 is changed to 1.77 – a reduction of 96 hours or four days. This could be caused by a data entry error in entering the actual finish date.

Figure 7 contains a sample of data take from the April 2009 draft and final reports to illustrate the two types of questionable changes. The first entry shows a truncated value, and the other lines show whole-day reductions.

						Original Call-to-Start Time (hrs)	Modified Call-to-Start Time (hrs)	Difference in Days	
Henryford Village	DEN6003	940188	Emergency	Gas Leak/ No hot water	4/27/2009	12.10	0.10	0.50	0.50
Henryford Village	MER9538	922221	Routine	garage man door	4/6/2009	355.55	43.55	13.00	4.00
Henryford Village	MER9527	931767	Routine	front door paint	4/17/2009	142.52	70.52	3.00	0.75
Henryford Village	GLN9531	933051	Routine	garage door opener/broken	4/20/2009	242.25	26.25	9.00	0.25
Henryford Village	BRA6016	933766	Routine	yellow curb	4/20/2009	210.77	18.77	8.00	1.00
Henryford Village	GLN9517	936784	Routine	When dishwasher runs, it "spit	4/22/2009	164.87	20.87	6.00	0.72

Start-to-Complete
Time (hrs)

Figure 7

July 2007. This sample shows the fewest failing work orders on both the draft report and the final report, with the bulk of the failing work orders coming from the George Washington Community. The draft report, which went out on 3 August, was preceded by a 27 July 2007 e-mail from the QA/QC Inspector to Community Managers, their Assistant Managers, and the Maintenance Supervisors, that stated in part:

“Team, today is now 27 Jul 07, and The Pass/Fail report looks bad. I am not sure what went wrong, because we were on the right track, then all of a sudden, things turned from bad to worse.

We are now at 83 Emergency, 87 Urgent and 74 Routine.

Do we have the right people in place to achieve the goal that we have set ?

If so, what is the problem ?”²²

Of the 10 failing work orders on the draft report, four had adjusted start times to bring them within the passing standard, one had the start time adjusted and priority downgraded from urgent to routine, and five show as review status on the final report. There is no pattern to the information on who last updated and when that was done.

August 2007. The data for this sample is incomplete, as the QA/QC Inspector only sent out a listing of routine work orders for this month. However, since routine work orders typically make up 80% of the monthly total, and few emergency or urgent work orders show up among the failures in the other months, it is reasonable to assume this data is suitable to contribute to the overall picture.

²² 27 July 2007 e-mail from QA/QC Inspector to Community Managers, et.al., subject: Pass/Fail.

This sample shows the second-largest number of failing work orders on the draft, as well as the second-largest reduction (81%) from the draft report to the final report. Virtually all of the failing work orders were from the Vernondale Community, however a detailed review of those 142 modified work orders shows 78 were updated by the Assistant Community Manager from the Fairfax Community, 20 were updated by the QA/QC Inspector, and 42 were updated by a Maintenance Technician from the Woodlawn Community.

Of the 146 failing work orders that were changed from failing to passing, 130 had the hours from call to start reduced by an exact number of days – from a low of three days to a high of 29 days difference.

All of these updates were made on 12 September, the same day the QA/QC Inspector e-mailed the list to the Fairfax Community Assistant Manager with the covering note – “Please let me know how far you get. I have a deadline of 1500hrs (3:00PM).”²³ When asked why he sent a list of primarily Vernondale Community work orders to the Fairfax Assistant Manager, he could not offer any reasonable explanation, and ultimately challenged the veracity of the e-mail.²⁴

When asked in an initial interview why she would have updated failing work orders for properties in Vernondale Community, the Fairfax Community Assistant Manager initially could not offer an explanation for why she was listed as having made the last update to the work orders.²⁵ In a recall interview, she described a process for modifying work orders she had been taught by the QA/QC Inspector that involved copying the actual time finished from the Labor and Parts section into the work completed date and time fields in the Status History section. After reviewing three of the changed work orders in Yardi, she acknowledged the changes were not consistent with the process she described, but again could not offer an explanation for why she was listed as having made the last update to those work orders.²⁶

When asked why he would have changed failing work orders to reflect passing times, the QA/QC Inspector repeatedly denied doing so. When pressed, he repeatedly stated he would have no reason to change any failing work order. The only explanation he provided for why Yardi might show him as the person last updating failing work orders was that somebody else could have made the changes using his computer while he was away from the machine. He stated he had no interest or incentive to change or update failing work orders. Initially he felt responsible for the information on the report, but at some point the Investment Manager made clear to him that the sites were responsible to straighten out the report.²⁷

December 2007. While the raw number of changes in this sample is not very large, when viewed as a percentage, it is on par with the other months in the sample. 13 of the 45 changed work orders were updated on 3 January, the same day the list was sent out. An additional 29

²³ 12 Sep 2007 e-mail from QA/QC Inspector to Rossell Village Assistant Community Manager, subject: Routine Pass/Fail, with attachment labeled Pass Fail Routine Aug 2007.xls.

²⁴ Recall Interview, QA/QC Inspector, 8 March 2011.

²⁵ Interview, Fairfax Assistant Manager, 3 March 2011.

²⁶ Recall Interview, Fairfax Assistant Manager, 22 March 2011.

²⁷ Recall Interview, QA/QC Inspector, 8 March 2011.

work orders were updated by the QA/QC Inspector on 10 January, three days before the final reports were due.

Of the 45 failing work orders that were changed to passing, 25 had the hours from call to start reduced by an exact number of days – from as few as three days to as many as of 25 days.

April 2009. This sample showed the largest number of failing work orders on the draft report, as well as the largest reduction (87%). More than 100 of the 190 updates for George Washington Community were made by the Warranty Coordinator on Friday, 8 May, the day the list was sent out, or on Monday, 11 May. Twenty two of the 26 Vernondale Community failing work orders were updated on 8 May by the Assistant Community Manager. At the Woodlawn Community, 31 failing work orders were updated by the Assistant Community Manager, while an additional 17 were updated by the Maintenance Supervisor – all done on 8 May.

Of the 268 failing work orders that were changed to passing, 149 had the hours from call to start reduced by an exact number of days – from a low of one day to a high of 28 days. Priorities were downgraded for 22 failing work orders.

When asked why she would have updated failing work orders in April 2009, the Warranty Coordinator stated that she was routinely sent out to assist the maintenance teams when they fell behind in their administrative tasks. She stated she assisted in entering data such as name of the assigned technician, job descriptions, or times based on written work tickets or discussions with the technicians. She denied changing times, stating she only entered times where none had been previously entered.²⁸

August 2009. This sample showed the same number of failing work orders on the final report as on the draft report. Although five George Washington Community work orders from the draft report were updated to reflect passing times, an additional five work orders from the Woodlawn Community that had been in review status on the draft were updated to reflect failing times on the final report.

April 2010. This sample showed a large number of failing work orders on both the draft report and final report, with only a modest (9%) decrease. Half of the changed work orders (7 of 13) were from Fairfax Community, and were updated on 10 May (the list was sent out on the previous Friday at 3:41 pm.) Six of the seven updates were in exact days.

When asked about the 7 updates, the Fairfax Community Maintenance Supervisor denied making the changes, even though Yardi indicated he was the last one to update the work orders. He stated that all the technicians used his account, so the changes could have been made by 4-5 different people other than him.

September 2010. This sample showed the largest number of failed work orders on the final report and one of the smallest reductions from the draft report (11%.) Vernondale Community actually added 13 failing work orders to the final report, while Fairfax Community took 34 off of the final report, a reduction of 73%.

²⁸ Interview, Warranty Coordinator, 17 March 2011.

Summary. Three of the seven sample months show an overall reduction in failing work orders greater than 80%. Although one of the other months showed a low overall reduction, one community had a reduction of 73%. Based on percentages reported in an e-mail, failing work orders appear to have been changed prior to the draft report even being sent out in one month.

Eight associates were responsible for at least 75% of the changes, in some cases updating work orders for properties in communities where they did not work. Most of the associates denied making the updates, but had no credible explanation for why Yardi showed they were the ones who made the last updates.

Approximately 63% of the changed work orders were whole-day reductions, and an additional 8% were changed by truncation. Neither type of change is likely associated with the correction of legitimate data entry errors. Only about one percent of the changed work orders were made to pass by downgrading the priority.

Several of the individuals shown as last updating the changed work orders stated they did so based on written notes the Maintenance Technicians made on the work order tickets. Actual work order tickets were not available for the specific time periods analyzed, but a random sample of 83 work order tickets from 2010 showed that while many had scheduled start times (input by the Maintenance Supervisor when assigning the work,) only 15 (18%) had any written information from the Maintenance Technician on actual start times.

Supplemental Analysis of Update Patterns.

In an attempt to fill in gaps in the detailed analysis presented above, a less detailed supplemental analysis was conducted for each of the 59 months in the period under review to determine if there were other months in which a large number of work orders were updated immediately prior to report submission.

In addition to the seven months when the QA/QC Inspector sent out detailed lists of problem work orders, the e-mail review identified four other months when he sent out a reminder to the Community leadership asking them to review their work orders. Although there was no consistent date for sending out these reminders, most were sent out in the week prior the pass/fail report due date of the tenth work day of the month.

The table in Figure 8 shows an analysis of work orders updated in the four day period prior to the monthly report due dates. For the months when a list or reminder was sent out, the four day period started on the day the e-mail was sent out (for the month of August 2007 there were only three days remaining until the pass/fail report was due.) For months where there was no record of a reminder going out, the period was the four work days prior to the due date of the report. The table shows the total number of work orders last updated during the four day period, and the number and percentage of those work orders that were from the previous month.

Overall, 26% of the work orders (6261 of 23989) were from the previous month. For the three months when a list was sent out and a significant decrease in the number of failing work

orders was observed (Aug 07, Dec 07, and Apr 09,) late-updated work orders accounted for 51% of all those updated during the period reviewed. Late-updated work orders accounted for more than 40% of the total in only eight of the 59 months.

Year	Month	Sample Dates	Total Updated	From Prev Month	%
2005	DEC	10-13 jan 06	363	114	31.4%
2006	JAN	9-14 feb	175	19	10.9%
	FEB	9-14 mar	268	60	22.4%
	MAR	11-14 apr	295	36	12.2%
	APR	9-12 may	213	21	9.9%
	MAY	9-14 jun	300	125	41.7%
	JUN	12-17 jul	329	55	16.7%
	JUL	9-14 aug	521	326	62.6%
	AUG	11-14 sep	297	103	34.7%
	SEP	9-12 oct	410	155	37.8%
	OCT	6-9 nov	522	292	55.9%
	NOV	11-14 dec	237	57	24.1%
	DEC	10-15 jan 07	188	21	11.2%
2007	JAN	8-13 feb	342	41	12.0%
	FEB	9-14 mar	358	178	49.7%
	MAR	10-13 apr	312	61	19.6%
	APR	9-14 may	477	212	44.4%
	MAY	11-14 jun	346	53	15.3%
	JUN	11-16 jul	291	48	16.5%
	JUL	3-8 aug	560	385	68.8%
	AUG	12-14 sep	369	218	59.1%
	SEP	9-12 oct	246	56	22.8%
	OCT	9-14 nov	253	46	18.2%
	NOV	11-14 dec	405	190	46.9%
	DEC	3-8 jan 08	252	86	34.1%

Year	Month	Sample Dates	Total Updated	From Prev Month	%
2008	JUL	11-14 aug	508	187	36.8%
	AUG	9-12 sep	413	81	19.6%
	SEP	9-14 oct	300	35	11.7%
	OCT	11-14 nov	365	37	10.1%
	NOV	8-12 dec	431	50	11.6%
	DEC	12-15 jan 09	433	46	10.6%
2009	JAN	9-13 feb	468	68	14.5%
	FEB	10-13 mar	490	115	23.5%
	MAR	9-14 apr	400	34	8.5%
	APR	8-13 may	1099	587	53.4%
	MAY	8-12 jun	539	94	17.4%
	JUN	9-14 jul	473	70	14.8%
	JUL	11-14 aug	542	75	13.8%
	AUG	10-14 sep	394	74	18.8%
	SEP	10-13 oct	232	14	6.0%
	OCT	8-11 nov	393	40	10.2%
	NOV	8-11 dec	669	35	5.2%
	DEC	12-15 jan 10	436	53	12.2%
2010	JAN	9-12 feb	176	34	19.3%
	FEB	8-12 mar	363	46	12.7%
	MAR	9-14 apr	622	75	12.1%
	APR	7-12 may	496	107	21.6%
	MAY	9-14 jun	593	86	14.5%
	JUN	9-14 jul	758	302	39.8%
	JUL	10-13 aug	449	87	19.4%

2008	JAN	11-14 feb	246	20	8.1%		AUG	9-14 sep	557	52	9.3%
	FEB	11-14 mar	418	251	60.0%		SEP	6-11 oct	644	199	30.9%
	MAR	7-11 apr	428	142	33.2%						
	APR	9-14 may	383	64	16.7%						
	MAY	10-13 jun	364	17	4.7%						
	JUN	9-14 jul	424	105	24.8%						

Figure 8

The same individuals identified as updating most of the work orders in the detailed data analysis were also observed in the supplemental data analysis. The Warranty Coordinator was responsible for 18% of all the late-updated work orders, the QA/QC Inspector was responsible for 8%, the Woodlawn Maintenance Technician²⁹ was responsible for 5%, and the Fairfax Community Assistant Manager was responsible for 4%. Maintenance Supervisors as a group were responsible for a total of just under 40%, and various Assistant Managers and Resident Specialists made up the rest at 2%-3% each.

One important item to note is that 15% (950 of 6251) of the late updated work orders were reported as failing. This is a higher failing percentage than seen on any of the draft pass/fail reports. Fully 46% of the Vernondale Maintenance Supervisor's late-updated work orders were failing.

Since Yardi only tracks the date and user information of the last update, there is no way to determine the actual substance of the updates. These updates could have been actual changes to the start time as seen in some of the detailed samples. They could also merely reflect closing out work orders late as opposed to changing the data in work orders previously closed out, or they could reflect merely the addition of details to the job description, warranty information, etc.

Maintenance Satisfaction Surveys.

When responding to work orders, Maintenance Technicians leave behind a survey card, commonly referred to as a "green card," allowing residents to rate their level of satisfaction with the maintenance response to their problem. The card has 5 questions:

1. Was the technician polite and presentable?
2. Did the technician offer to make additional repairs?
3. Were all of the identified issues completed?
4. Did the technician leave the work area clean?

²⁹ This individual's updates only span a 24 month period from Mar 2006 to Feb 2008. He is no longer employed at Pinnacle Belvoir.

5. Rate the explanation given on work performed?

For each question, the resident is asked to state whether they are very dissatisfied, somewhat dissatisfied, neither, somewhat satisfied, or very satisfied.

Although the surveys are voluntary and the response rate was only approximately 5-10%, the results showed that for each year from 2004 to 2010, over 90% of responses for all questions combined fell under the “Very Satisfied” and “Somewhat Satisfied” categories.³⁰

Testimony.

In his initial interview, the complainant stated all of the Assistant Community Managers were involved in changing work orders at one time, and the Assistant Manager from Fairfax Community told him she had changed work order information. He also stated that on one occasion he sat in the office with the Fairfax Community Maintenance Supervisor and they both made changes to their work order information. He stated the guidance came from the QA/QC Inspector, and the Warranty Coordinator was the one who showed him how to make the changes. He also stated there was a Maintenance Technician who originally made the changes when the complainant started working there.³¹ The Fairfax Community Maintenance Supervisor stated that he only corrected data for negatives and reviews.³²

The complainant described the actions he took in response to requests to review the pass/fail report as: “We just make up a time within that timeline. [The QA/QC Inspector] sends out a report, a spreadsheet. You just print the spreadsheet, and go off the spreadsheet. You input the work order number in Yardi – we don’t keep paper copies. We just go off the actual printout he sends out. You just open the ticket, and you see where it failed, and you may say this was at 74 hours so I have to back date it two hours or I can back date it a whole day, or I can backdate it two days just to make it pass.”³³

In an interview, the Woodlawn Community Maintenance Supervisor admitted to falsifying work order completion time. He stated the Maintenance Director and QA/QC Inspector told them in maintenance meetings “we had to have no fails, and that we had to reach above 95% pass/fail.” When asked what specifically he was changing he stated “Mostly reviews, which were tickets that were not completed, or tickets with negatives, and a few fails...I just went in and corrected the work order, the times, the guys were, the times that were stated on the ticket.”³⁴

When asked if he knew if anybody else was changing data, he stated “It’s my understanding just about everybody did it.” He stated he discussed the issue with the Vernondale Maintenance Supervisor “a couple of times,” and believed the Vernondale Maintenance Supervisor was doing it also.

³⁰ Pinnacle In-House Maintenance Survey Results at Fort Belvoir, prepared by Capstone based on data provided by the Pinnacle-Belvoir Investment Manager, 14 Apr 2011.

³¹ Complainant Interview, 8 Feb 2011.

³² Interview, Fairfax Community Maintenance Supervisor, 14 Feb 2011.

³³ Complainant Interview, 8 Feb 2011.

³⁴ Interview, Woodlawn Maintenance Supervisor, 14 Feb 2011.

The Vernondale Maintenance Supervisor denied changing data, and although many of his properties showed up among the detailed sample data, he was not the one who last updated the majority of those work orders. With regard to the supplemental analysis, 367 (46%) of the 804 work orders last updated by the Vernondale Maintenance Supervisor were actually failing.

E-mail review.

In addition to e-mails related to the specific months reviewed above, the QA/QC Inspector sent many other e-mails out to the Community Managers, Assistant Managers, and Maintenance Supervisors requesting they review the pass/fail report. Some sample comments from those e-mails are:

“Team, please be mindful of all of these negative marks on the Pass/Fail report, for May 2007. I do see that the service requests are being closed out, but I still see a lot of negatives on the sheet.”³⁵

“Please take time to look over your Pass/Fail Report (in Excel) to make sure that you do not have any Negatives lingering. Also, to clear any Review marks that can be eliminated.”³⁶

“Team, in an effort to create clean reports, I am going to ask you to pay more attention to your service requests on a daily basis. We have been seeing an overwhelming presence of “Reviews” on the Pass/Fail Report, and I don’t have any way of determining the true status of a service request in this category. Please be sure not to leave any request in “Review” status, going forward.”³⁷

“Team, This is just a reminder that, there can be no minus (-) signs or “Review” marks on your Pass/Fail report.”³⁸

The consistent theme in these reminders was reviewing work orders showing negative time and those in a review status. None of the e-mails asking the community leadership to review work orders and the pass/fail reports mentioned taking any action with regard to failing work orders.

There were, however, two e-mails that indicated that the QA/QC Inspector may have been changing work orders.

In an 8 November 2006 e-mail to the Maintenance Supervisor at Vernondale Community, the QA/QC Inspector stated:

³⁵ 5 Jun 2007 e-mail from QA/QC Inspector to Maintenance Supervisors, et.al., subject: Watch.

³⁶ 7 Sep 2007 e-mail from QA/QC Inspector to Maintenance Supervisors, et.al., subject: REPORTS.

³⁷ 12 Mar 2008 e-mail from QA/QC Inspector to Maintenance Supervisors, et.al., subject: Clean Reports.

³⁸ 30 Oct 2008 e-mail from QA/QC Inspector to Maintenance Supervisors, et.al., subject: Just a reminder.

“...Please pay close attention to the Pass/Fail, because we only have one (1) day left to get this done.

I was working on yours today for a while (as you were at 68 percent overall) but I was call [sic] away due to a major Backup situation at Woodlawn.”³⁹

When asked to explain the meaning of “I was working on yours today,” the QA/QC Inspector stated it could only mean that he had been reviewing the report. A review of all work orders updated on 8 Nov confirmed he did not make any updates that day, however, on 8 and 9 November the Warranty Coordinator updated 237 work orders for Vernondale Community properties.

In a 15 December 2009 e-mail to Maintenance Supervisors at Vernondale and Dogue Creek Village, the Maintenance Director stated “[The QA/QC Inspector] had a lot of data errors that he had to correct for your villages.”⁴⁰ The supplemental data analysis identified a total of 13 Dogue Creek Village work orders updated by the QA/QC Inspector on 8 and 10 December 2009.

A 22 June 2007 e-mail from the Community Director provided an updated Service Request Procedure, and directed subordinates to insert the attachment into their maintenance reference binder. The procedure required Maintenance Supervisors to assign work to technicians at the start of the day and again after lunch. Technicians were required to close out their tickets in Yardi before lunch and at the end of the day. The Maintenance Supervisor would review the tickets and insure the work was completed properly and to the resident’s satisfaction. The Community Manager would receive all tickets and insure 100% callbacks to residents were performed.⁴¹

A 24 April 2008 e-mail reinforced the procedures established in the 2007 e-mail, and provided additional detail on filling out the information in Yardi.⁴²

Analysis and Findings.

Three of the detailed data samples (Aug 07, Dec 07, and Apr 09) showed more than an 80% reduction in the number of failing work orders from the draft to the final report. A fourth sample (Jul 07) appears to have had a substantial reduction in the number of failing work orders even before the draft pass/fail report was sent out for review, based on the poor percentages cited in an e-mail seven days prior. While the overall reduction in Sep 10 for all of Belvoir was small, the 73% reduction for the Fairfax Community is significant.

All of the communities, with the exception of Lewis, had significant reductions in at least one of the sample months. Lewis Village, now a part of Woodlawn Community, is a small

³⁹ 8 Nov 2006 e-mail from QA/QC Inspector to Vernondale Maintenance Supervisor et.al., subject: Re: Report.

⁴⁰ 15 Dec 2009 e-mail from Maintenance Director to Maintenance Supervisors, et.al., subject: Re: Pass/Fail Report.

⁴¹ 22 Jun 2007 e-mail from Community Director to QA/QC Inspector, Maintenance Director, et.al., subject: Service Request Procedure, with attachment labeled MAINTENANCE.doc.

⁴² 28 Apr 2008 e-mail from Community Director to Community Managers, Maintenance Supervisors, et.as., subject: Re: Pass/Fail, with attachment labeled Service Request Close out Process in Yardi.doc.

village, and the former Maintenance Supervisor stated they had no issues addressing the relatively small number of work orders they received.

The complainant alleged that Assistant Community Managers and four other specific associates were involved in this practice. Three Assistant Community Managers and all four of the other named associates appear in the detailed analysis as having changed failing work orders to passing. These same individuals also appear prominently in the supplemental analysis of late-updated work orders, but the exact nature of those updates cannot be determined.

Two of the four individuals identified as making numerous changes could offer no reasonable explanation as to why they were listed in Yardi as the last person to update the work orders, and the other two denied changing data for failing work orders. The explanation that other associates may have used the computer while they were logged into the system, or multiple associates using the same account is not credible due to the number of work orders changed and the timing of the changes – typically occurring the same day the draft report was sent out.

Finally, the manner in which most of the work orders were changed from failing to passing was not consistent with the mere correction of errors. While 70% of the changes were in whole-hours or whole-days, only 16% of these changes were in the increments expected from typical data entry errors. Additionally, the sample of work order tickets reviewed indicated that few actually contained the information needed to properly correct data entry errors.

For the three months when a list was sent out and a significant decrease in the number of failing work orders was observed (Aug 07, Dec 07, and Apr 09,) late-updated work orders accounted for 51% of all those updated during the period reviewed. Late-updated work orders accounted for more than 40% of the total in only eight of the 59 months.

The policies established in June 2007 and April 2008 required work orders to be closed out the day the work was completed. The supplemental analysis showed that for late-updated work orders, the average number of days between actual finish time and the update was 17 days.

None of the individuals making updates to the work order data had any monetary incentive to do so. While some understood that the pass/fail percentages were related to the annual Management Incentive Fee, they were unaware of the details of that calculation and they knew they did not benefit personally from any increases to the Management Incentive Fee. Changes included adding failing work orders after the “reviews” were resolved.

While the detailed data was only available to conclusively say a significant number of failing work orders were changed to passing in three months, the same group of associates made similarly timed updates on a significant number of work orders in a total of 8 of the 59 months. These associates had no explainable reason to be updating the particular work orders based on their duties, were unlikely to have had the proper information to correct data entry errors, or were closing out work orders well in excess of the time required by policy. Based upon the preponderance of the credible evidence, the allegation that associates improperly updated work order data is substantiated.

Objective 2: Did management officials direct associates to falsify work order data?**General.**

The allegation that management officials directed associates to falsify work order data is not substantiated. Only three of nine Community Managers or Maintenance Supervisors claimed to have been directed to falsify data or felt they had been directed to do so, but an additional two felt that others may have perceived the discussions as pressure to do so. While two Maintenance Supervisors who admitted to falsifying data claimed to have been directed to do so by the QA/QC Inspector and the Maintenance Director, the other three Maintenance Supervisors stated they were never told to make work orders pass the response times, did not recall any discussions in maintenance or manager meetings that could be interpreted as guidance to falsify data, and never felt any pressure to falsify work order data. The Community Director and two Investment Managers denied directing anyone to falsify maintenance data, and stated that nobody expressed concerns to them about the guidance they gave related to the pass/fail report. A review of e-mail showed an ongoing concern about getting correct information into the database in a timely manner, and constant reminders to review and correct inaccurate data related to “negatives” and “reviews,” but there was no mention of changing information related to failing work orders.

The answer to this objective was primarily based on interviews with Pinnacle Belvoir associates and a review of available e-mail. The complainant alleged that the practice of changing failing work orders was openly discussed in meetings with the Investment Manager present, and associates were threatened with punishment if they did not get their pass percentages up. In his initial interview, the complainant stated “It wasn’t a direct punishment, its just in this place, in this particular place, ... They accumulate a lot of little petty things to retaliate against you and they’re often, I don’t know how they do it, they just get other people to fall in and the next thing you know you got four people scrutinizing what you do and the next thing you know you’re wrote up or you’re fired.” Since he could not cite specific threats, and no other associate made similar claims, this issue was not fully pursued.

Testimony.

In his interview, when asked specifically where he got the guidance to change failing work orders, the complainant stated the guidance came from the QA/QC Inspector through e-mails and in maintenance meetings. He stated he raised the issue to the Maintenance Director, and he believed he raised the issue to Community Director.⁴³

The Woodlawn Community Maintenance Supervisor, who also admitted to falsifying data, stated the guidance came for the Maintenance Director and QA/QC Inspector in maintenance meetings.

⁴³ Complainant Interview, 8 Feb 2011.

The Vernondale and Fairfax Maintenance Supervisors both stated they were never told to make work orders pass the response times, and never felt any pressure to falsify work order data.⁴⁴

The Turns Coordinator, a former Maintenance Supervisor at Lewis Community, did not recall any discussions in maintenance or manager meetings that could be interpreted as guidance to falsify data, only to “make sure the information is right.”⁴⁵

The George Washington Community Manager stated she believed people may have gotten the impression they should falsify maintenance data in a late 2007 or 2008 meeting with the Community Director and QA/QC Inspector. She felt what they were being asked to do was against her integrity and said she would not be a part of it. While she could not recall specifics of the discussion, she stated “I apparently perceived the instruction to be that we were to change the dates to pass the reporting system, otherwise I don’t think I would have said it was against my integrity to do the report.” When asked if she took the issue to the Community Director’s supervisor, the Investment Manager, she stated she did not remember the conversation “ever turning to that point.” She did recall the Investment Manager saying the pass/fail report needed to be correct, but she felt that making the report right and changing times were two different things.⁴⁶

Interviews with the other three Community Managers did not provide as clear picture of the atmosphere related to pass/fail reporting. None of the three claimed to have any reason to believe associates were changing data for failing work orders, nor did they feel they were being directed to do so.

The Woodlawn Community Manager recalled it being routinely discussed, particularly at the end of the month. She also recalled it being a very hot topic in the fall of 2008 due to low numbers in some specific communities. She stated that nobody ever flat-out said “go into Yardi and falsify or manipulate” data, but gave example terminology such as “we are at 72%, this is failing, this is unacceptable, we need to be at 95%, fix it.”⁴⁷

The Vernondale Community Manager stated there was discussion about raising the percentages, managers being held accountable, etc, but she did not feel there were any suggestions to do anything improper.⁴⁸

The Fairfax Community Manager stated she never got any impression they were being told to falsify reports, they were just told to fix the negatives and reviews.⁴⁹

Although the Accounting Director’s involvement in maintenance reporting was limited to receiving the pass/fail reports for incorporation into the monthly financial package, she has been

⁴⁴ Interviews, Fairfax and Vernondale Community Maintenance Supervisors, 14 Feb 2011.

⁴⁵ Interview, Turns Coordinator, 14 Mar 2011.

⁴⁶ Interview, George Washington Community Manager, 8 Feb 2011.

⁴⁷ Interview, Woodlawn Community Manager, 14 Feb 2011.

⁴⁸ Interview, Vernondale Community Manager, 14 Feb 2011.

⁴⁹ Interview, Fairfax Community Manager, 14 Feb 2011.

working in that position since May 2004 and attends all of the manager-level meetings. She recalled the pass/fail report was a “constant” topic at manager meetings. The Investment Manager or Community Director often announced that the Community Managers and Maintenance Supervisors needed to correct the reports – to make sure the information in the reports was correct. She did not take that as guidance to change it for the better, just to make it correct. She could not say how others may have interpreted the discussion, but she never took it to mean manipulate the reports or do anything improper.⁵⁰

The Maintenance Director stated that prior to the allegations surfacing he had no reason to believe anybody had been falsifying data in Yardi. There were conversations to make sure everybody had the correct information entered into Yardi. All sites knew they had to review work orders with issues – improper or inaccurate entries. He had no recollection of any manager meetings where the pass/fail report was a major topic of discussion or where the Community Director issued any guidance about the pass/fail report. He stated that if people said they got pretty explicit guidance to change data to make work orders pass that would be inaccurate, and no Community Manager or Maintenance Supervisor had expressed any concerns to him indicating that they felt under pressure to falsify data. He stated that he never told anyone to make sure work orders pass the response time, nor did he hear anybody else say that.⁵¹

The QA/QC Inspector stated he never analyzed, beyond a glance, the reports that came back after he sent out reminders or lists of problem work orders – once the deadline hit he had to send it, and if there was kickback, it kicked back to the sites. He stated that he had no authority to direct anybody to do anything, and that the people in charge needed to be asked these questions. “Everybody here, for the most part, that I know of, that has anything to do with the report, are following orders.” When asked what the orders were he replied: “whatever their specific orders are, my orders were to compile the report and get to the Investment Manager.” Despite this comment in the recall interview, in his initial interview, the QA/QC Inspector specifically stated “nobody was ever asked to change a fail into a pass... everyone has been instructed if there are fails, a legitimate fail, if you just didn’t get there on time as a response, then that’s just that.”

When asked how some associates could have had a sense that they were expected to not just correct factual errors, but to actually change data to make legitimate failing work orders pass, The QA/QC Inspector stated that particular language was never used, but “some of the strong terminology that was used in office meetings, could have led someone to believe that they were asking for a little more.” He recalled one meeting where there was heated discussion about changing data, although he could not recall the date or who chaired the meeting, in which the George Washington Community Manager said she felt uncomfortable changing anything, as that was an integrity measure. “I specifically said in that meeting, that none of have been asked to falsify information, but to just correct what needs to be corrected, but I think a lot if not all were under the impression they needed to make the scores pass.”

When asked about statements that there was guidance that the pass rate has to be above 95%, he stated “Nobody ever said... I know on a couple of occasions Investment Managers and

⁵⁰ Interview, Accounting Director, 14 Feb 2011.

⁵¹ Interview, Maintenance Director, 9 Feb 2011. The Maintenance Director’s employment was terminated shortly after the initial interview and he was not reinterviewed.

Community Directors said there is really no reason for us to be in some low range of response...that kind of stuff on a regular basis had been said.” He felt some of the managers and supervisors could be intimidated, but couldn’t specifically say anyone gave instructions to change the data.⁵²

The former Community Director recalled that the pass/fail report was discussed periodically in meetings, as were all policies. With regard to discussion of goals for pass percentage, the ultimate goal would be 100%, which could never be met for good reasons, but “we were never told to do whatever you can to do to make it come out that way.” From what was reported to her, she understood the main problem with the pass/fail report was that associates were not putting information into Yardi promptly. She was sure that the work was being done, or else “I’d have 2000 residents at my doorstep saying we have all these tickets outstanding and nobody is doing anything.”⁵³

The Investment Manager from 2007 recalled the major issue with pass/fail reporting was thousands of negative numbers in the historical data. A temporary hire was brought in to review the 2006 work orders and make sure the data was correct. She had no reason to believe that associates were falsifying data to influence the pass/fail rating. She stated they had a pass/fail goal of 95%, and believed she may have sent out e-mail to reinforce that goal and gave guidance to review data and make sure it was accurate. She also cited a failure to promptly close out work orders as a common issue contributing to low pass/fail percentages. She never directed anybody to falsify the data, and nobody ever raised issues about feeling pressure to falsify data.⁵⁴

The Investment Manager from 2005-2006 and 2008-2010 stated she was not aware of anyone putting false information into Yardi. Her recollection of the major issue related to the pass/fail report was a failure to close out tickets promptly. She stated the pass/fail percentage was not routinely discussed in meetings, she “simply wanted to know what occurred, and for that to be recorded in Yardi accurately, and that the tickets be closed out in a timely fashion every month.” She “never asked any employee to do anything other than record what occurred for that particular ticket and do it in a timely fashion.”⁵⁵

E-mail review.

A review of e-mail found many examples, going back as far as August 2005 indicating that the Investment Managers and Community Directors had continuing concerns about problems with the pass/fail report. The e-mail reinforces the testimony that the management’s concern was for accurate and timely reporting.

On 25 July 2005, the Community Director sent an e-mail to Community Managers asking “How is it possible that we are following up with completed work orders when we have so many still in “review” status?”⁵⁶

⁵² Interview, QA/QC, 10 Feb 2011, and Recall Interview, 8 Mar 2011.

⁵³ Interview, former Community Director, 18 Mar 2011.

⁵⁴ Interview, 2007 Investment Manager, 15 Mar 2011,

⁵⁵ Interview, 2005-2006/2008-2010 Investment Manager, 23 Mar 2011.

⁵⁶ 25 July 2005 e-mail from Community Director to Community Managers, et.al., subject: Re: Pass/Fail.

Several days later, after reviewing the July 2005 pass/fail reports, the Investment Manager forwarded the e-mail to the Maintenance Director and Community Director with the comment:

“UNACCEPTABLE! I can not turn in reports with these percentages.

[Maintenance Director] – I explained to you earlier this week that I would hold you accountable for this project. This is by far the lowest success rate to date. I need answers immediately...”⁵⁷

A review of the November 2005 pass/fail report prompted the Investment Manager to ask the Maintenance Director “What is the explanation for all of the negative numbers on the summary report?”⁵⁸

A July 2007 e-mail from the QA/QC Inspector to the Community Managers, Assistants, and Maintenance Supervisors related to low numbers for the approaching pass/fail report deadline went on to say:

“In addition to the low score, there is an extremely high volume of Negatives on this report. If someone is not sure of the procedure that is in place, please ask.

I understand that this letter is redundant, and no actions have been taken, but it stops here. I have been instructed (by [Investment Manager]) to start write ups, that may lead to other disciplinary measures.

Of course that is not how I wanted to motivate anyone, but since I am held accountable for the quality and production of the sites, I have been left with no other alternative.”⁵⁹

A 14 April 2008 e-mail from the Investment Manager to the QA/QC Inspector stated:

We need to get a better effort on the “Review” notations. Our metrics clearly says we get credit on a pass or fail basis. This means if it is classified as Review – it is technically a fail. Please drill down on this problem and resolve it as quickly as possible. Please let me know what you discover as the cause.”⁶⁰

A 28 April 2008 e-mail from the QA/QC Inspector to Community Managers and Maintenance Supervisors stated “... You need to take a look at your Pass/Fail, to insure that all data is accurate. As stated in the last meeting, you will be responsible for making sure that there

⁵⁷ 12 Aug 2005 e-mail from Investment Manager to Maintenance Director and Community Director, subject: Fwd: Pass/Fail July 2005 Revised.

⁵⁸ 14 Dec 2005 e-mail from Investment Manager to Maintenance Director, et.al., subject: Re: 2005 Nov Pass/Fail.

⁵⁹ 27 Jul 2007 e-mail from QA/QC Manager to Community Managers, et.al., subject: Pass/Fail

⁶⁰ 14 Apr 2008 e-mail from Investment Manager to QA/QC Inspector, subject: Re: Monthly Pass/Fail.

are no “Negative Marks” as well as “Reviews” found in the report.”⁶¹ This e-mail also forwarded fairly specific instructions on how to close out service requests in Yardi.

A 13 August 2008 e-mail exchange between the Community Director, the Investment Manager, and the Maintenance Director recounted a meeting with Managers and Maintenance Supervisors from the Vernondale and George Washington Communities. The pass/fail report was due that day, and those two Communities still had many “negatives” and work orders in review status. The Investment Manager stated she expected reports which reflected only pass or fail marks. She stated all failures must be researched and supervisors help accountable for the failure including an action plan for correction. Later in the day the Community Manager responded that she, the Maintenance Director, and the QA/QC Inspector met with the individuals and told them that if the report was not completed and accurate by the end of the day they would have no choice but to “TERMINATE” positions today.⁶²

In August 2008, the Community Director, through the QA/QC Inspector, instituted a requirement for all communities to forward a weekly pass/fail report.⁶³ Although the QA/QC Inspector received the reports, he stated that he did not review them. This was an attempt to force the Community leadership to routinely review the information rather than wait until the end of the month. The practice was eventually discontinued after the Community Director departed in late 2009.

Analysis and Findings.

The two Maintenance Supervisors who admitted to entering false data into Yardi claimed to have been directed to do so by the QA/QC Inspector and the Maintenance Director, who both denied ever giving such directions. The other three Maintenance Supervisors stated they were never told to make work orders pass the response times, did not recall any discussions in maintenance or manager meetings that could be interpreted as guidance to falsify data, and never felt any pressure to falsify work order data.

One of the four Community Managers stated she believed people may have gotten the impression they should falsify maintenance data in a late 2007 or 2008 meeting with the Community Director and QA/QC Inspector, however she could not recall specifics of the discussion. None of the other three Community Managers felt they feel they were being directed to falsify information, but two felt that others may have perceived the discussions otherwise.

While the QA/QC Inspector made vague statements in a recall interview that associates dealing with the pass/fail report “are following orders,” he was not able to provide any details, and this contradicted his previous multiple assertions that nobody was asked to change a fail to a

⁶¹ 28 Apr 2008 e-mail from QA/QC Inspector to Community Managers and Maintenance Supervisors, subj: Pass/Fail

⁶² 13 Aug 2008 e-mail exchange between Investment Manager, Community Director, and Maintenance Director, subject: Report Due – Pass Fail.

⁶³ 25 Aug 2008 e-mail from QA/QC Inspector to Woodlawn Community leadership, subject: Interim Report for Woodlawn. A separate e-mail was sent to each of the communities.

pass. That statement was seen as self-serving, given that it came after he was presented with evidence that he had changed failing work orders.

The former Community Director and two former Investment Managers denied directing anyone to falsify maintenance data. They expressed concerns about inaccurate data entry, both in meetings and through e-mail, but understood that to be caused by administrative error and lack of discipline in closing out work orders in a timely manner. They stated that nobody expressed concerns to them about the guidance they gave related to the pass/fail report. In 2007 and 2008, the Community Director sent out guidance on work order handling and close out procedures in an attempt to correct the problems.

Most of the e-mail from the Investment Managers was directed to the QA/QC Inspector, Maintenance Director, and Community Director, not the Community leadership. It was clear that the Investment Managers were dissatisfied with the continually high numbers of “negatives” and “reviews.” Only one e-mail from the Investment Managers mentioned failing work orders and that simply gave prudent guidance to research the cause of each failing work order to prevent future problems.

There was constant e-mail traffic from the QA/QC Inspector to the Community Managers and Maintenance Supervisors about the pass/fail report, but the common theme in these messages was the need to review work orders showing negative time and those in a review status. None of the e-mails suggested taking any action against subordinates with regard to failing work orders. And while there was one e-mail from the QA/QC Inspector that stated he had been instructed “to start write ups, that may lead to other disciplinary measures” there was no indication this ever occurred.

Based upon the preponderance of credible evidence, the allegation that management officials directed associates to falsify work order data is not substantiated.

Objective 3: What improvements to work practices can be made to prevent the problem from continuing?

The maintenance operations at Pinnacle Belvoir are largely decentralized, with the bulk of the assets assigned directly to the Maintenance Supervisors in the communities. The Maintenance Director, asked to describe his major duties, stated he was “just a resource for them [Maintenance Supervisors,] I help them do capital projects, anything major in their property they need a helping hand on with getting vendors.”⁶⁴ He did not indicate any significant involvement in the day-to-day maintenance activities.

The practical effect of this arrangement is 4 independent maintenance operations rather than one overall coordinated maintenance operation.

The US military analyzes its requirements and capabilities in the dimensions of "DOTLMPF", being:

- Doctrine
- Organizations
- Training
- Leader Development
- Material
- Personnel
- Facilities

This is a useful framework for developing and evaluating solutions to any complex problem, and is not military-specific.

Doctrine.

While there was evidence that the Community Director sent out some detailed procedures for the administrative processing of work orders on two occasions, very few other maintenance practices were documented, and it was clear that different maintenance supervisors handled similar situations differently. The Maintenance Director’s duties, as outlined in the CDMP, include “establishing and implementing maintenance and preventive maintenance guidelines for the maintenance teams.” Clearly written policy guidance and more detailed work area procedures would standardize maintenance operations across the communities.

Examples of areas these policies should address include: handling situations where correct reporting results in “negative” times, rules for downgrading of priorities, use of the vendor and warranty priorities, and when to accept a call to the resident as response time. Several other specific policy and process changes are addressed in the other DOTLMPF categories below.

⁶⁴ Interview, Maintenance Director, 9 Feb 2011.

Organizations.

In addition to the development of comprehensive maintenance policies, another method to standardize maintenance operations among the communities would be to centralize maintenance operations under the Maintenance Director. Having the Maintenance Director take a more active role in the day-to-day maintenance operations by acting as the direct supervisor of the Maintenance Supervisors would not be inconsistent with his responsibilities as outlined in the CDMP.

Maintenance teams could still be habitually related to specific communities, and they could continue to operate out of the existing facilities in the community centers. This tie would continue to foster a sense of personal responsibility to the Community Manager and residents.

A benefit of the centralized model would be to provide the Maintenance Supervisors with a supervisor with a better knowledge and understanding of their core maintenance duties than the Community Managers possess. Recognition and sharing of unique talents in the maintenance workforce and the ability to easily cross-level resources to resolve specific short-term challenges would be increased in a centralized model.

Consolidation of maintenance resources may also result in an economy of scale that could allow the hiring of data entry clerks as described later in the Personnel section, which may be cost-prohibitive under the current decentralized model.

Training.

Many associates described their training to use Yardi as minimal, and questions about performing specific tasks sometimes resulted in unexpected responses. One Maintenance Supervisor stated that until recently told otherwise, when closing out work orders, he always changed the scheduled start time to match the actual start time. He did not offer a rational explanation for doing this, just that it was how he had always closed out work orders. The Fairfax Community Assistant Manager's description of her process for modifying work orders involving copying the actual time finished from the Labor and Parts section into the work completed date and time fields in the Status History section made no sense, and she was not able to explain a rationale behind the change.

A review of printed work order tickets and work orders, indicated that many work orders are not being fully processed (steps being omitted and data fields not fully filled out) as the system is designed to operate. It was not clear if this was caused by a lack of training or a lack of detailed procedures that can be enforced. While Yardi does not seem to be a particularly complicated software application, it does not have many safeguards to prevent users from incorrectly entering data, as described in the Materials section below.

Leader Development.

Management concerns over the pass/fail report, specifically negative times and work orders in review status, were repeatedly expressed in e-mail and in manager meetings for several years. It is apparent in the e-mail messages and from interviews with the former management officials that the issues were thought to be administrative failures and to address this, the Community Director sent out detailed work order procedures in 2007 and 2008, but to no apparent effect. There was no evidence that management took any other meaningful actions beyond repeatedly telling subordinates to fix the problems.

Community Managers' level of involvement in the pass/fail reporting varied, but seemed to be low overall. One did not participate because she felt it would be against her integrity to do the report according to the guidance as she perceived it. One stated "if I look at it, it may be once a quarter...its not a report I look at very much."⁶⁵ When asked if she reviewed the report with her Maintenance Supervisor, one Community Manager stated "I spot check it sometimes...I mainly rely on him and it's his job."⁶⁶ Only one Community Manager described routinely reviewing the report with her Maintenance Supervisor.

The QA/QC Inspector was the recipient of most of the Investment Manager and Community Director e-mail, and he felt he did not have their full backing, stating in an interview that "compliance was not the order of the day."⁶⁷

A leader training program for Community Managers and Maintenance Supervisors, focused on basic topics such as team building, employee counseling and coaching, inspections, ethical and professional standards, as well as technical training on maintenance operations, Yardi, and the Management Incentive Plan would be useful.

Material.

Material solutions that would automate data collection and entry would help decrease the maintenance administrative burden and increase the fidelity and accuracy of the information in Yardi and by extension, the pass/fail reporting. While a Personal Data Assistant (PDA) solution was unsuccessfully tried in the 2005-2006 timeframe, technology has increased significantly since then, and several solutions may now be available.

Bar-code or radio-frequency tag technology could be used to easily and accurately collect start and finish time information. Affixing a tag to each house that the technician could scan with a portable device when he arrives and departs would provide more reliable data for not only the pass/fail reporting, but also for workload analysis, and potentially for technician performance evaluation and training need assessment. An ideal solution would have a software bridge to port the time data directly into Yardi, decreasing work and potential for data entry error, but even without this bridge, there would be an increased reliability in the reported time information.

⁶⁵ Interview, Woodlawn Community Manager, 14 Feb 2011.

⁶⁶ Interview, Fairfax Community Manager, 14 Feb 2011.

⁶⁷ Recall Interview, QA/QC Inspector, 8 March 2011.

The Yardi software is used industry-wide by property managers with varied requirements, so it is flexible and adaptable to many needs. Several changes to the way Yardi is used and several changes to the software would also increase the fidelity and accuracy of the pass/fail reporting.

Process Changes. There are several process changes that could be implemented by policy to improve the fidelity of maintenance information in Yardi.

During the time period reviewed, all of the personnel on a maintenance team accessed Yardi with the Maintenance Supervisor's user name and password. During the conduct of this review, the Investment Manager obtained an additional account for each maintenance team so the technicians do not have to use the Maintenance Supervisor's account. This is a positive step, but still results in a situation where several associates are using the same account and it is difficult to hold any one individual responsible for potential improper actions. Individual accounts for all maintenance technicians would provide the ability to fully audit the maintenance administration and hold individuals accountable for their actions.

Establishing individual accounts for technicians would also properly limit the Yardi functions to which they have access. Access to certain software functions are controlled by assigning accounts to functional groups (Maintenance Director, Maintenance Supervisor, Accountant, etc.) so the practice of technicians using Maintenance Supervisor accounts gave technicians access to functions they should not have had access to.

The system is also currently set up to allow all associates access to any property on Fort Belvoir. A further information assurance safeguard would be to give associates access to only the properties within their communities. While this would limit some flexibility to task organize personnel to meet short-term special requirements, and require coordination with the IT department when reassigning personnel between communities, it would restrict associates' access to only the areas of the database that they have a legitimate need to routinely access.

Although pass/fail reporting is based on 3 priorities – Emergency, Urgent, and Routine – Yardi has over a dozen different choices in the priority menu. Two of the other priorities that appear regularly, although not particularly often, are Vendor and Warranty. These priorities are used to be able to track work orders that are being performed by an outside party, and are not included in the pass/fail reporting. Since the work orders come into the system as Emergency, Urgent or Routine, and a reason to change them to Vendor or Warranty would not be apparent until a technician responds to the work order, the work orders should be included in the pass/fail calculation based on whether or not the response standard for the original priority was met.

An alternative method to track vendor and warranty work without losing the original priority information is to assign each type to a specific technician. At Fort Lee, they assign warranty work orders to the Warranty Coordinator and vendor work orders to the Maintenance Director. Another solution is to create "dummy" technicians in the system – warranty tech and vendor tech. Either way, a listing of all warranty or vendor work orders can then be created by running the report based on the technician's assigned work orders.

Yardi Software Changes. There are also several changes to the Yardi software that would make the program less susceptible to input error and potential manipulation.

Yardi allows work orders to be closed without having gone through the normal work order processing steps, and without entering some necessary data. A normal work order goes through a series of status changes (call, scheduled, in-progress, work completed, etc.) with standard data inputs (time and dates, job descriptions, etc.) associated with each status. Yardi will allow users to bypass status changes, for example going straight from call status to work complete status. Yardi will also allow the processing of work orders that have no priority assigned. While this may provide useful shortcuts for the processing exceptional work orders, it allows the introduction of error into the system by individuals who may not be fully trained or supervised.

Yardi allows completed work orders to be edited without any special permission. While it may be useful to allow some data fields such as the job description to be edited by any user at any time, it would be prudent to lock some fields once the work order is put in a work completed status. Changes to the priority, time, or parts information once a work order is closed out should require at least the Maintenance Supervisor level. Creation of a special report to track these changes would also be useful.

Yardi allows future times to be entered into the system. While this would be necessary for entering a scheduled time, allowing a user to enter a future time as an actual start or finish time allow error or manipulation. At a minimum, a prompt asking the user to confirm that they are entering a future time would help prevent error.

Yardi also allows times to be entered out of sequence – that is, the software will allow you to enter a finish date and time that is before the start date and time. As with future times, a prompt asking the user to confirm that they are entering times out of the expected sequence would help prevent error.

Reports. Several useful changes to the existing reports could be made independent of Yardi software changes.

The report created for the supplemental data analysis that allows the extraction of work orders that were updated during a user-defined period of time is a good audit tool and should be refined and maintained in the menu of reports available to maintenance supervisors.

Periodic reports showing who is updating work orders and when those updates are being done would also give management a better picture of the maintenance administration.

Personnel.

All of the Maintenance Supervisors felt they had sufficient technicians to meet the required response times under normal circumstances. The addition of clerks for the main purpose of Yardi data entry may have merit some merit by fixing responsibility, decreasing some administrative burden on Maintenance Supervisors, and minimizing training requirements.

There is no standard procedure for who enters specific data into Yardi. Although the two procedures promulgated in 2007 and 2008 specified data the technicians should enter and specific data the Maintenance Supervisors should enter, it was clear in the interviews that these procedures were not followed. Most Maintenance Supervisors stated they allowed different technicians to enter different data, based primarily on an assessment of their computer skills, so data entry is not even standardized within each maintenance team. Adding data entry clerks would clearly fix responsibility for data entry error.

Another positive benefit of a dedicated data entry clerk would be a minimization of Yardi users and the subsequent training requirement.

The addition of data entry clerks could also minimize data entry backlogs and identify technician errors earlier in the process. Dedicated data entry clerks could quickly scan work order tickets upon the technicians' return from each call, and get missing data immediately rather than several days or weeks later. A more advanced function, particularly in a centralized system, could even have the clerks acting as dispatchers, communicating with technicians in the field by phone or radio, getting real-time information about work order start, completion, and other maintenance issues.

Facilities.

No significant facilities issues were noted with the exception of a lack of dedicated office facilities for the QA/QC Inspector and Turns Coordinator.